

## AMENDMENTS

### In the Claims

#### Current Status of Claims

1. **(canceled)** A process for cleaning a material comprising the step of:  
contacting a material with an extracting fluid under conditions of temperature and pressure  
sufficient to maintain the fluid at, near or above its critical point to produce a clean material.

2. **(currently amended)** The process of claim ~~1~~25, wherein the extracting fluid is selected from  
the group consisting of ~~comprising~~ Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, CO<sub>2</sub>, H<sub>2</sub>O,  
lower alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof.

3. **(currently amended)** The process of claim ~~1~~25, wherein the extracting fluid comprises a  
major portion of CO<sub>2</sub> and a minor portion of a secondary fluid selected from the groups consisting  
of Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, H<sub>2</sub>O, lower alcohols, lower alkanes, lower  
alkenes and mixtures or combinations thereof.

4. **(currently amended)** The process of claim ~~1~~25, wherein the extracting fluid is CO<sub>2</sub>

5. **(currently amended)** The process of claim ~~1~~25, wherein the material-to-be-treated is a drill  
fluid and the ~~clean material~~ non-aqueous fluid product comprises a hydrocarbon product  
substantially free of contaminants, ~~a~~ and the solids product is substantially free of hydrocarbons and  
other contaminants, ~~and an aqueous product~~.

6. **(currently amended)** The process of claim ~~1~~25, wherein the material-to-be-treated is a used  
oil and the ~~clean material~~ non-aqueous fluid product comprises a cleaned oil substantially free of  
water and water soluble contaminants and substantially free of solids.

7. **(currently amended)** The process of claim 6, wherein the cleaned oil has a lower sulfur  
content than the used oil prior to treating.

1 8.(currently amended) The process of claim ~~1~~25, wherein the material-to-be-treated is a  
2 hydrocarbon fuel and the ~~clean material~~ non-aqueous fluid product comprises a cleaned fuel having  
3 a lower sulfur content than the hydrocarbon fuel prior to ~~cleaning~~ treating.

1 9.(currently amended) The process of claim ~~1~~25, wherein the material is a hydrocarbon  
2 contaminated soil and the ~~clean material~~ non-aqueous fluid product comprises a hydrocarbon  
3 product substantially free of solids, water and water soluble contaminants, the solids product  
4 comprises a cleaned soil substantially free of hydrocarbon and other contaminants, and ~~an~~ the  
5 aqueous product is substantially free of hydrocarbon.

1 10.(canceled) A process for treating drilling fluids comprising the step of:  
2 contacting a drill fluid with an extracting fluid under conditions of temperature and pressure  
3 sufficient to maintain the solvent at, near or above its critical point to produce a hydrocarbon product  
4 substantially free of contaminants, a solids product substantially free of hydrocarbons and other  
5 contaminants, and an aqueous product.

1 11.(canceled) The process of claim 10, wherein the extracting fluid is selected from the group  
2 consisting of comprising Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, CO<sub>2</sub>, H<sub>2</sub>O, lower  
3 alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof.

1 12.(canceled) The process of claim 10, wherein the extracting fluid comprises a major portion of  
2 CO<sub>2</sub> and a minor portion of a secondary fluid selected from the groups consisting of Xe, NH<sub>3</sub>, lower  
3 aromatics, nitrous oxide, water, CO, H<sub>2</sub>O, lower alcohols, lower alkanes, lower alkenes and mixtures  
4 or combinations thereof.

1 13.(canceled) The process of claim 10, wherein the extracting fluid is CO<sub>2</sub>

1 14.(currently amended) A ~~cleaned drilling fluid solid~~ solids composition comprising a solid  
2 ~~material obtained from a process of any~~ the solid product of the claim ~~1~~25.

1 15.(currently amended) A hydrocarbon composition comprising ~~a hydrocarbon material and~~  
2 ~~drilling additives obtained from a process of any~~ the fluid product of the claim ~~1~~25.

1 16.(currently amended) An aqueous composition comprising ~~an aqueous material obtained~~  
2 ~~from a process of any~~ the aqueous product of the claim ~~1025~~.

1 17.(canceled) A process for treating used oil comprising the step of:  
2 contacting a used oil with an extracting fluid under conditions of temperature and pressure  
3 sufficient to maintain the solvent at, near or above its critical point to produce a cleaned oil  
4 substantially free of water and water soluble contaminants.

1 18.(canceled) The process of claim 17, wherein the extracting fluid is selected from the group  
2 consisting of comprising Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, CO<sub>2</sub>, H<sub>2</sub>O, lower  
3 alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof.

1 19.(canceled) The process of claim 17, wherein the extracting fluid comprises a major portion of  
2 CO<sub>2</sub> and a minor portion of a secondary fluid selected from the groups consisting of Xe, NH<sub>3</sub>, lower  
3 aromatics, nitrous oxide, water, CO, H<sub>2</sub>O, lower alcohols, lower alkanes, lower alkenes and mixtures  
4 or combinations thereof.

1 20.(canceled) The process of claim 17, wherein the extracting fluid is CO<sub>2</sub>

1 21.(canceled) A process for treating hydrocarbon fuels drilling fluids comprising the step of:  
2 contacting a hydrocarbon fuel with an extracting fluid under conditions of temperature and  
3 pressure sufficient to maintain the solvent at, near or above its critical point to produce a cleaned  
4 fuel having a lower sulfur content than the hydrocarbon fuel prior to cleaning.

1 22.(canceled) The process of claim 21, wherein the extracting fluid is selected from the group  
2 consisting of comprising Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, CO<sub>2</sub>, H<sub>2</sub>O, lower  
3 alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof.

1 23.(canceled) The process of claim 21, wherein the extracting fluid comprises a major portion of  
2 CO<sub>2</sub> and a minor portion of a secondary fluid selected from the groups consisting of Xe, NH<sub>3</sub>, lower

aromatics, nitrous oxide, water, CO, H<sub>2</sub>O, lower alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof.

24.(canceled) The process of claim 21, wherein the extracting fluid is CO<sub>2</sub>

#### **New Claims**

25.(new) A process for treating a material-to-be-treated comprising the step of:  
charging a quantity of the material-to-be-treated into an interior of an inner tube of a tubular extraction vessel comprising: an upper portion including an outer tube, an middle tube, and an inner tube; a semi-permeable membrane; and a lower portion,  
charging a quantity of an extraction fluid to a plurality of interior sites of the tubular reactor until the fluid is at or above its critical point,  
extracting the material-to-be-treated with the extraction fluid under conditions of temperature and pressure sufficient to maintain the extraction fluid at or above its critical point for a time sufficient to achieve a desired degree to treatment,  
currently with extracting, removing water and water soluble components via the semi-permeable membrane into the lower portion of the tubular extraction vessel to produce an aqueous product,  
forwarding the treated material and the extraction fluid in a first separation vessel comprising an interior, a treated material inlet, a fluid outlet and a solids outlet having a venturi valve;  
removing the solids through the venturi valve to a solids storage container to produce a solids product,  
removing the fluid to a second separator having a fluid level sensor to produce a non-aqueous fluid product, and  
transferring the non-aqueous fluid product to a fluid storage container.

26.(new) A solids composition comprising the solid product of the claim 5.

27.(new) A hydrocarbon composition comprising the fluid product of the claim 5.

28.(new) An aqueous composition comprising the aqueous product of the claim 5.

- 1      29.(new)      A solids composition comprising the solid product of the claim 7.
- 1      30.(new)      A hydrocarbon composition comprising the fluid product of the claim 7.
- 1      31.(new)      An aqueous composition comprising the aqueous product of the claim 7.
- 1      32.(new)      A solids composition comprising the solid product of the claim 8.
- 1      33.(new)      A hydrocarbon composition comprising the fluid product of the claim 8.
- 1      34.(new)      An aqueous composition comprising the aqueous product of the claim 8.
- 1      35.(new)      A solids composition comprising the solid product of the claim 9.
- 1      36.(new)      A hydrocarbon composition comprising the fluid product of the claim 9.
- 1      37.(new)      An aqueous composition comprising the aqueous product of the claim 9.